



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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APR - 8 1993

Memorandum

To: Assistant Regional Director-Refuges and Wildlife
(Attention: Fred Paveglio, Division of Biological Support)

From: ^{Acting} Assistant Regional Director-Ecological Services

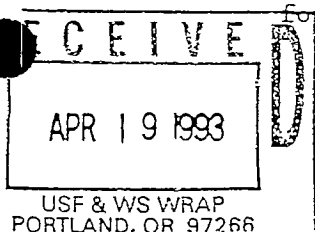
Subject: Comments on the Proposal to Determine the Concentrations and Loading Rates of Waterborne and Particulate Contaminants Present in the Diagonal Drain and S-Line Canal Entering the Stillwater National Wildlife Refuge

This responds to your request for a Division of Environmental Contaminants (EC) review of the proposal titled "Concentrations and Loading Rates of Contaminants in Diagonal Drain and S-Line Canal near the Stillwater National Wildlife Refuge." The 2 goals of the subject proposal are to:

- 1) determine if the quality of the water delivered to the Stillwater National Wildlife Refuge (NWR) via the Diagonal Drain and S-Line is adequate for wetland management and,
- 2) to identify areas contributing contaminants to the Diagonal Drain.

EC has the following comments:

- 1) While the proposal identifies and summarizes the results of other studies conducted at the Stillwater NWR, it does not clearly explain how the current design will compliment or go beyond previous efforts. The proposal would benefit by defining the scope of existing information including work done at the refuge by Region 8 National Fisheries Contaminant Research Center personnel, as well as work in Fiscal Year 1992 conducted as part of the 1261 Refuge Clean Up projects. It should be noted in the proposal that the planned work is likely to be complimentary to previous studies rather than definitive.
- 2) The proposal does not explain or justify the focus on collecting and measuring suspended abiotic material (detritus), algae, and "drift samples." The importance of these measurements and how they will elucidate dissolved metal inputs to the refuge need to be added. Literature citations indicating the significance of sediment-bound metal transport processes should be included to support this element of the study design. Also, passive sampling for benthic invertebrates is not a representative approach. If



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the concentration of metals in food chain organisms is a focus, perhaps benthic invertebrate sampling should be added. Finally, evaluating metal loading rates for the Stillwater NWR would require a more extensive sampling program than the proposed study, including monitoring of all six drains entering the refuge, rather than the S-Line Canal and Diagonal Drain.

- 3) The scale of Figure 1 and lack of site description information makes it impossible to determine if the selected sampling locations are representative. An explanation of the attributes of the recommended sites would be beneficial.
- 4) While this proposal focuses on surface water inputs of metals, it fails to acknowledge the potential significance of groundwater inputs or surrounding soil composition. The availability of hydrological and soil chemistry data for the basin should be noted in the proposal as the basis for future interpretation of the study's results.
- 5) The value of comparing the concentrations of metals measured in detritus or biota (measured as mg/g dry weight) with water quality criterion for the protection of wildlife (expressed in mg/l) as a basis for accepting or rejecting the suitability of the incoming water is not well supported. The purpose of such a comparison should be explained.
- 6) Since this proposal was prepared, the method for mercury analyses in water has been changed. Cold vapor reduction for atomic-absorption spectroscopy for mercury is no longer available through the Patuxent Analytical Control Facility. This development may influence sample collection and handling procedures.
- 7) The proposed sampling frequency is dependent upon water availability. The criterion for the terms used (below, average, and above normal) should be defined in the proposal.
- 8) Quality Control and quality assurance goes well beyond method specific considerations. The measures described in the proposal do not go far enough to ensure well-documented and verifiable study results. Qualifications, roles and responsibilities of investigators and technicians are not included in the proposal. Standard, documented procedures should be cited and used whenever possible to ensure data comparability with previous studies.

The following errata were noted in the proposal and should be corrected.

- 1) page 5, second paragraph, first sentence: change classified as to located in;
- 2) page 10, first sentence on page: correct chemical symbol for arsenic is As not Ar;

4) page 12, last sentence: change consideration of to possible.

We appreciate the opportunity to review the subject proposal and look forward to working with you on the contaminant issues associated with the water at Stillwater NWR. If you have any questions, please contact Don Steffeck (Chief, Division of Environmental Contaminants) of my staff at 6223.

Stephen W. Barry

cc: Reno FO
Stillwater NWR
Ron Weaver, Water Rights Acquisition Planning

JWOLFE/T'OBRIEN:drs March 8, 1993 rvs April 2, 1993

FILENAME:STILLWAT.NWR

CONTROL #:93-00447

BPIM#:JOHN117Concentrations and loading rates of contaminants in Diagonal
Drain (DD) and S-Line (SL) canal near the Stillwater NWR